Ready, Set - Kindergarten!

Family Guide for Preschool – Kindergarten Development

Exploring Shapes, Patterns, Numbers, Comparisons

One of six guides to help with readiness for school

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Carolina Family Engagement Center

Equity, Opportunity & Excellence in Education

Readiness is not just ABCs or counting or knowing colors. Families need to be aware of ALL areas of their child's development – physical, emotional, language, and thinking. Children have a great ability to learn and grow. Adults provide the best support for their child when they encourage their individual abilities and readiness to learn.

For preschoolers and kindergartners, the highest form of research and learning is through play. Make it fun!

Encourage your child to notice, watch, wonder, and ask questions about the math found in their surroundings. "Tell me how you sorted these objects?" "Which group is bigger or smaller?" Readiness for school is developing a child's willing attitude and positive view of learning new things, not just gaining knowledge. The more you know, the more you can help your child grow and gain readiness for school.

Six areas of growth and development help children progress and succeed.

SIX AREAS OF GROWTH AND DEVELOPMENT

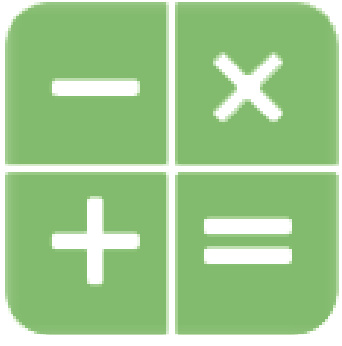
The individual way each child learns
(Approaches to Play and Learning)

Feelings about self, developing relationships, and controlling emotions
(Emotional and Social Development)

Their motor development, nutrition, health/safety
(Health and Physical Development)

Gaining the basics for reading, writing, and speaking
(Language Development)

Exploring shapes, patterns, numbers, comparisons
(Mathematical Thinking)



Learning to think, make decisions, solve problems
(Cognitive Development)

This guide is one of six that offers a brief introduction to each area and provides a sample of the experiences and skills children need to be prepared to move through preschool, at three-, four-, and five-years of age.

All adults caring for children wear many hats. You must be a playmate, nurse, cook, coach, and teacher. This document is designed to help by giving:

- Examples of the experiences and typical range of skills your child should learn and be able to do at each level of development in gaining the basics for shapes, patterns, numbers, and comparisons.
- Activities to help your child at home.
- Additional resources for information and help.

Every child progresses at a different rate and so the developmental indicators included here describe what a child generally achieves by the END of each age level.

These experiences and skills are drawn from the South Carolina Early Learning Standards (https://www.scchildcare.org/media/55097/SC_ELS-second-edit.pdf) and the South Carolina College- and Career- Ready Standards (https://ed.sc.gov/instruction/standards-learning/). Both guidelines were developed by numerous experts in learning, based on years of research, and after review and comment by the public.

Number Sense

Preschool children have an inborn sense of math. At this age, they begin to understand numbers and quantity. They investigate organizing and separating objects into groups and building on numbers understanding during play and other activities.

These Ready, Set steps include:

Age 3 Preschool

- Count to 10.
- Recognize written numbers up to 10.
- Match written numbers 1-5 to groups of objects, with help.
- Compare groups that are more, the same, or different.
- Understand that adding objects to a group will make a bigger group and removing objects will make a smaller group.

Age 4 Preschool

- Count forward to 20.
- Understand the connection between number and quantity through 10 when counting objects.
- Compare groups with up to 5 objects using the terms more than or less than.
- Count up to 10 objects in several ways (left to right, right to left, in a stack).
- With help, match numbers 1-10 to sets of objects (such as the number "2" to two pieces of candy).
- Identify the positions first through tenth using actual objects.
- Show different ways a group can be broken apart or put together (5 items into 2 and 3, for example).

Age 5 Kindergarten

- Count by ones and tens to 100.
- Read and write numbers 0 to 20.
- Understand that the last number said tells the number of objects in a group and that the number of objects is the same regardless of how they are placed or the order in which they are counted.
- Compare two written numbers up to 10 using more, less, equal to.
- Know that 11 is 1 ten and 1 one, 12 is 1 ten and 2 ones, up to 19.

Numerical Thinking, Geometry & Spatial Understanding

Preschool children begin to think mathematically as they sort, describe, and create simple patterns. They start to see how numbers can be taken apart and put together. They also learn to identify different shapes, sizes, and directions and learn the positions of objects.

These Ready, Set steps include:

Age 3 Preschool

- Identify objects as the same or different.
- Sort familiar objects into categories (such as cars with cars or balls separate from blocks).
- Recognize repeating patterns.
- Group objects that are the same shape.
- Name or match a few two-dimensional and three-dimensional shapes (circle, sphere, triangle, cone).
- Begin to use words describing positions (in, on, over, under).

Age 4 Preschool

- Sort a group of up to 10 objects by one feature (such as size, shape or color).
- Notice, describe, copy, and extend simple repeating patterns found in their surroundings (such as patterns on shirts, floor tiles, necklace beads).
- Begin to create a simple repeating pattern.
- Identify two-dimensional and three-dimensional shapes from everyday life (circle, square, triangle, rectangle, cube, sphere, pyramid.)
- Classify objects by color, shape, size, or use (forks for eating, balls for play).
- Understand and use words to describe the location of objects (up, down, in, over, under, behind, on top of, and in front of).
- Use flat and solid shapes to represent real objects (a triangle and square to make a picture of a house, put a cone on a block to make a tower).

Age 5 Kindergarten

- Sort up to 20 items into two to three groups by one feature.
- Analyze shapes of different sizes and positions and compare the differences.
- Describe simple repeating patterns like shapes, colors, and activities found in a shirt, drawing, or game.

Measurement & Data Analysis

Preschoolers learn the concepts of length and weight through investigation. They work to understand data analysis through comparing and explaining the information.

These Ready, Set steps include:

Age 3 Preschool

- Use words for size and amount (short, tall, long, heavy).
- With help, use simple objects to casually measure objects (beans, paper clips, crayons).
- Compare two objects by size, length, or weight (sort string by length or boxes by size, or rocks by weight).
- Recognize time passing throughout the day (snack time, outside play, lunch time).

Age 4 Preschool

- Use words for size, length, or weight (short, tall, long, heavy).
- Compare several objects by size, length, or weight (sort string by length or boxes by size, or rocks by weight).
- With help, use simple measurement tools to measure objects (ruler for length, cup for amount).
- Recognize time passing throughout the day (snack time, outside play, lunch time).

Age 5 Kindergarten

- Identify what features of an object can be measured (length, weight).
- Use descriptive words to describe objects (lighter/heavier, shorter/longer).
- Sort items and classify the "data" into two or three categories (red squares and yellow circles, or small rocks and big rocks).
- Associate time concepts with a clock.

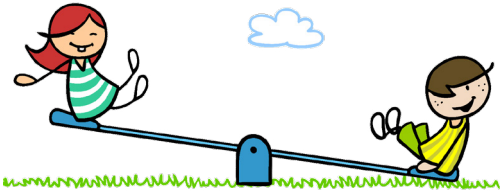
Mathematical Thinking & Reasoning

Preschool children use math to solve problems in their everyday environment. They begin to make sense of quantities and patterns and to use written numbers to represent concepts. It is important to give your child the opportunity to discuss their reasoning and the strategies they used to solve problems.

These Ready, Set steps include:

Age 3 Preschool

- Seek answers using math approaches during everyday activities (determine who is taller by standing side by side, find two smaller blocks to balance a large block).
- Use drawing and objects to represent math ideas (draw circles to show "lots of people" or stack blocks to show number of members in their household).
- Have methods to solve puzzles and similar materials.



Age 4 Preschool

- Seek answers using math approaches during everyday activities (how to balance a building of blocks, build a bridge, or divide a cookie among friends).
- Use drawing and objects to represent math ideas (draw many circles to show "lots of people" or stack blocks to show number of members in their household or draw shapes or colors to represent a pattern).
- Talk about ways to complete increasingly difficult puzzles ("What can you do to get started on this puzzle?""What if you found the corner pieces first?").

Age 5 Kindergarten

- Make sense of problems encountered and work until they are solved.
- Use a variety of math tools to think and solve problems.
- Describe simple repeating patterns like shapes, colors, and activities found in a shirt, drawing, or game.
- Solve real-world problems by adding and subtracting up to 10, using objects and drawings (Ben took two cookies out of the bag and Kwan took three. How many cookies did the two boys have?).

Learning At Home

Learning happens all the time, not only in a classroom. Use your surroundings to encourage mathematical thinking and make it lots of fun for preschoolers. You can support the development of math skills by being enthusiastic about math. Notice how math is a part of your daily activities and use "math-talk" to describe your and your child's activities. Here are a few suggestions for learning at home.

Count, count, count to and with your child. Count fingers, steps, toys, cars, anything and everything, and connect the counting to the number of objects counted. Ask your child, "We have 5 at dinner tonight, how many plates will we need?" or "We have 2 cookies to share with 4 friends, what can we do?"

Have your child sort toys by type: balls, blocks, model cars, dolls. Ask if one group has more, has less. Is the pile of blocks bigger than the pile of cars?
Let your kindergartner sort the laundry. Sort it by type (socks, shirts, pants), by color, or by a family member. Also, have your child sort objects and tell you how they sorted them.

Practice measuring by using cups and bowls, measuring tape or stick. Create a "growth chart" and let your child measure his/her height over time.

Cut into pieces a picture from a magazine and let your child practice putting the picture back together. The older your child, the more pieces and the more difficult the shapes of the pieces you cut.

Practice identifying the shapes of objects. Work with your child to find squares, circles, cones while in a store or around the house.

Use items from outside for learning. Use sand, leaves, sticks, rocks, pine cones to sort, count, and compare. For example: sort rocks by color or size, make shapes with small pebbles, write a number on each rock (1 through 10) and call out a number for your child to pick up. Draw shapes in the sand, dust, or mud.

Cereal and candy are for more than eating. Use colored cereal or M&Ms for counting. "How many orange ones in your hand?" or for sorting and comparing, "Is the yellow pile bigger or smaller than the green pile?" "Who has more?" "Who has the least?"

Many puzzle games are available free online. Print out from the internet or buy "connect the dots" puzzles with a low number of dots (10 to 20) and work with your child to connect the numbered dots to make the picture.

Ask your child questions that require counting and comparing. "How many doors are in our house?" (Listen to make sure they understand that the last number they say is the quantity they counted or if they continue to recount the group when you ask, "How many?") "Which chair is taller, this one or that one?" "Which book is heavier?" "Who is taller, older, bigger?"

Play simple games with your child. Have them jump foward or back, higher or lower, hop three times or jump five times. Have your child run far away or near to you. This helps them learn and understand words for different positions.

Additional Information

Get ideas and instructions for hands-on activities in math for all levels of preschoolers at teachingmama.org.

There are games, puzzles and activities to teach all levels of preschool math available on both the computer and smart phone: pbs.org/parents/education/math/games/ or turtlediary.com/kindergarten-games.html or mathgames.com.

Kahn Academy has activities to help master all the kindergarten math skills: khanacademy.org/mission/early-math. Available on both computer and smart phone.

Download a free copy of A Family's Guide: Fostering Your Child's Success in School Mathematics, a publication from the National Council of Teachers of Mathematics, at
http://illuminations.nctm.org/uploadedFiles/Activities_Home/FamilyGuide_FullText.pdf.

Check out mathgametime.com then click on "preschool" or "kindergarten" for games, videos, and printable worksheets. But go easy on the worksheets - remember that at this age learning should be play.

Try https://Funbrain.com/pre-k-and-k-playground for games and stories to read that include math fun and thinking.

Another site for kindergartners is https://splashmath.com. It is free but you must sign up.

For ideas and printouts of puzzles and games and hands-on activities, try https://www.pinterest.com. Type in "preK math activities" or "preK worksheets" in the search box for ideas. For the older child, type in "kindergarten activities at home" or "kindergarten worksheets at home." No copier? Draw the puzzles and games yourself or try your public library; they should have a copier.

Your public library has many books for your child that help with numbering, shapes, colors, sorting, and counting. Adding books to your everyday fun with math also helps your child with the basics of reading.

Have concerns about your child's physical or mental development? Take a look at https://www.familyconnectionsc.org/ for more developmental milestones, an explanation of screenings for needed services, and connections to those services. The site and phone conversations are available in Spanish as well as English.

Carolina Family Engagement Center

Equity, Opportunity & Excellence in Education

The Carolina Family Engagement Center is located in and coordinated through the University of South Carolina's SC School Improvement Council (SC-SIC) in the University of South Carolina's College of Education. Contact them at https://cfec.sc.gov/ or 1-800-868-2232 or 1-803-777-7658.

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